ASP
Barcode Zapper

ASP Microcomputers
456 North Road,
Ormond, Victoria, 3204
Australia
Telephone: (03) 9578-7600
FAX: (03) 9578-7727
email: solutions@asp.com.au
WWW: http://www.asp.com.au

(ASP Microcomputers is a division of Grayline Holdings Pty. Ltd,. A.C.N. 004 940 729)

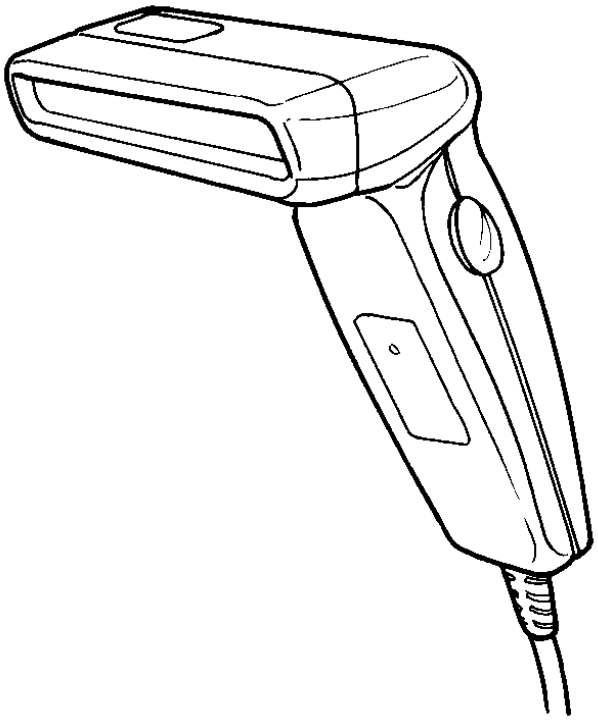
Manual revised: June 14th, 2005

Contents

The ASP Barcode Zapper

ASP's Barcode Zapper is a compact high-performance hand-held barcode scanner suitable for reading barcodes up to 80mm wide.

The Barcode Zapper has an oval shaped push button switch on the left side, positioned right where your thumb comfortably sits when held in your right hand, or where your index finger sits when held in your left hand.



To read a barcode, simply place the scanner's reading window over a barcode, and press the button. The scanner will automatically read the barcode, output the data, and beep to signal a successful read.

You can place the scanner's reading window down onto the barcode label, or “slide” it onto the barcode in the direction of the bars, but you can’t slide it across the barcode as you would with a wand.

The Barcode Zapper has been pre-programmed to read most barcode types you are likely to encounter. For special requirements, please contact ASP or your dealer.

If you are having trouble reading barcode labels, the most common causes are likely to be:

- Trying to read a barcode too wide for the scanner (ie, wider than 80mm)
- Not having the reading window properly positioned over the barcode, or
- Having the reading window covering more than one barcode.

Very poor quality or damaged barcode labels may also present scanning problems, but it may be possible to read them by moving the scanner up and down the label in the direction of the bars, to find an undamaged path across the barcode symbol.

Barcode Symbologies

Scanning nicely printed barcode labels is simple, and most decoders can easily read well-printed labels. But because there are so many poorly printed barcode labels in the real world, the Barcode Zapper has been designed to handle printing tolerances of up to ± 200% to help it to read virtually any barcode label, even if it's badly printed.

The ASP Barcode Zapper auto-discriminates all popular and special barcode symbologies, including:

- Standard Code 39, Full ASCII Code 39, Code 32, HIBC
- Code 93, Code 11, Codabar, NW-7
- Code 128 A/B/C sets, UCC/EAN 128
- Product Codes (UPC/EAN/JAN/CAN/APN) with addendum
- Standard/Industrial/Matrix/Inverted/Compressed 2 of 5
- MSI/Plessey, UK/Plessey, IBM Delta, BCD, ITF
- Interleaved 2 of 5, Interleaved 2 of 5 S Code, IATA

Host Interfaces

The ASP Barcode Zapper has five standard interface types built-in - PC Keyboard Wedge, Wand Emulation, Apple Macintosh, RS-232 Output and RS-232 Serial Wedge. These interfaces are selected via special setup barcodes, and connect via plug-in adaptor cables.

One adaptor cable is supplied with each ASP Barcode Zapper; additional adaptor cables are available as optional extras. Adaptor cables can be removed by pushing the end of a paper clip into the hole near the Barcode Zapper end of the adaptor, and then carefully pulling the connector out.

The standard termination character for the Barcode Zapper is a single carriage return. To remove this terminator, or to change it back to a single carriage return, please use the setup barcodes on page 19. Other termination characters are also available - please contact ASP or your dealer with your requirements.

PC Keyboard Wedge

The **Keyboard Wedge** interface connects between an IBM AT or PS/2 or compatible computer and its keyboard, and power for the scanner and interface is taken from the computer.

The PC's keyboard still operates normally, but when a barcode is scanned, the keyboard is momentarily disabled, and the barcode data is sent to the computer as if it had been entered from the keyboard. In this way, all your existing programs are able to accept barcode input without requiring any modifications.

The **Keyboard Wedge** adaptor cable is available in two forms - for AT type computers (not old PC or XT types) using large 5-pin DIN connectors, and for PS/2 type computers using 6-pin mini-DIN connectors.

To install the **Keyboard Wedge**, first turn off your computer, and unplug the keyboard from the computer. The cable from the keyboard should now be plugged into the socket on the adaptor cable, and the plug on the adaptor cable plugs in to where the keyboard used to be connected on the computer.

Turn the computer on, and the Barcode Zapper will emit a high/low beep to indicate that it has passed its power-on diagnostic tests.

Wand Emulation

The **Wand Emulation** interface decodes barcodes and converts them to wand-compatible signals, so that you can easily upgrade your existing barcode decoder.

The **Wand Emulation** interface uses the Hewlett Packard wand signal standard, with a high level idle state, high output on black, 30ms margin time and 50us module time. Other signal levels and timings are also available - please contact ASP or your dealer with your requirements. The **Wand Emulation** interface uses a female D9 connector, with wand data on pin 2, ground on pin 7 and +5v on pin 9.

The Barcode Zapper is a low power scanner, ideally suited to portable applications.

Apple Macintosh

The **Apple Macintosh** interface connects between an Apple Mac keyboard and mouse, or to the second ADB port, and barcode data is transmitted to the computer as if it had been entered from the keyboard. In this way, all of your existing programs automatically accept barcode input.

To connect the Barcode Zapper, unplug the Mac from mains power, then unplug the mouse from the keyboard. Plug the adaptor's male connector (the one with the pins) into the socket that the mouse used to plug into, then plug the mouse into the other socket on the adaptor cable, effectively interposing the adaptor between the two.

Alternatively, the male connector of the Apple Macintosh interface can be connected directly to the second ADB port on the back of the computer. The other socket on the adaptor cable can simply be left hanging free.

RS-232 Output

The **RS-232** interface outputs decoded barcode scans using ASCII codes and the RS-232 standard. The **RS-232** interface is compatible with ASP's ASPKey software, allowing RS-232 output to be accepted from the serial port and placed directly in the keyboard buffer of IBM PC compatible computers.

The **RS-232** interface is supplied with a special power supply and regulator (5 volt DC 500mA), which provides power for the Barcode Zapper.

The **RS-232** interface is supplied set to 9600 baud, 8 data bits, no parity and 1 stop bit. To change the baud rate, please use the setup barcodes on page 17.

RS-232 Serial Wedge

The RS-232 **Serial Wedge** interface also outputs decoded barcode scans using ASCII codes and the RS-232 interface standard, but it includes RS-232 joining circuitry, allowing it to be used in between an RS-232 video terminal and host computer.

The **Serial Wedge** is supplied with a special power supply and regulator (5 volt DC 500mA), which provides power for the Barcode Zapper.

The **Serial Wedge** assembly connects between a full-duplex asynchronous ASCII RS-232 video terminal and its host computer. Data from the terminal is fed into the **Serial Wedge** and logically joined with the wedge's outgoing RS-232 signal. In this manner, the host computer is "tricked" into thinking that barcode scans have been typed on the terminal's keyboard. ASCII code only is available.

The **Serial Wedge** is designed to suit video terminals fitted with a female D25 connector (this is the usual case). If your video terminal instead uses a D25 male connector, you should contact ASP for advice.

Switch off the terminal, then unplug the RS-232 cable from the host computer from the back of the video terminal, and plug it into the serial wedge cable. Next, plug the other connector on the serial wedge cable into the connector on the video terminal that the cable from the host computer was plugged into, effectively interposing the **Serial Wedge** between the two.

The RS-232 **Serial Wedge** interface is supplied set to 9600 baud, 8 data bits, no parity and 1 stop bit. To change the baud rate, please use the setup barcodes on page 17.

Standard Barcode Zapper Configurations

The next section of this manual contains the standard configuration sheets for each of the available interfaces. Your Barcode Zapper will already have been properly configured and tested for the interface you ordered it with, so these setup sheets are included just for completeness and in case you purchase additional interface adaptors.

To set up your Barcode Zapper unit, simply turn to the relevant page for the interface type you require, and scan the setup barcodes on that page, taking care to scan them in the numerical order shown. You must not skip any barcodes, or scan any of the barcodes more than once. If you make a mistake, simply scan the END barcode and start again.

The Barcode Zapper has a vast number of data formatting, verification and operational control options, far more than could be covered in this manual. If you have any special scanning requirements, it's likely that the Barcode Zapper can be configured to suit, so please contact ASP or your dealer to discuss your needs.

Standard Wand Emulation Setup

You **must** scan the barcodes below in the numerical order shown. Note, however, that you won't normally need to scan these setup barcodes – your Barcode Zapper will normally have been supplied already set up for you.

1 
MASTER DEFAULT

2 
WAND EMULATION DEFAULTS

3 
PROGRAM

4 
HOST INTERFACE SELECTION

5 
0

6 
8

7 
MARGIN TIME

8 
4 (30 millisecs)

9 
NARROW/WIDE RATIO

10 
1 (1:2.5)

11 
ADJUSTABLE BUZZER TONE

12 
0 (DISABLE)

13 
CCD/LASER OP. MODE

14 
0 (LOW POWER MODE)

15 
CODE 39 MIN LENGTH

16 
0

17 
1

18 
CODE 25 MIN LENGTH

19 
0

20 
2

21 
END

Standard PC Keyboard Wedge Setup

You **must** scan the barcodes below in the numerical order shown. Note, however, that you won't normally need to scan these setup barcodes – your Barcode Zapper will normally have been supplied already set up for you.

1 
MASTER DEFAULT

2 
KEYBOARD WEDGE DEFAULTS

3 
PROGRAM

4 
HOST INTERFACE SELECTION

5 
0

6 
1

7 
CODE 39 MIN LENGTH

8 
0

9 
1

10 
CODE 25 MIN LENGTH

11 
0

12 
2

13 
END

USB Keyboard Wedge

You **must** scan the barcodes below in the numerical order shown. Note, however, that you won't normally need to scan these setup barcodes – your Barcode Zapper will normally have been supplied already set up for you.

1

MASTER DEFAULT

2

USB KEYBOARD DEFAULTS

3

PROGRAM

4

HOST INTERFACE SELECTION

5

1

6

8

7

CODE 39 MIN LENGTH

8

0

9

1

10

CODE 25 MIN LENGTH

11

0

12

2

13

END

Standard Apple Macintosh Setup

You **must** scan the barcodes below in the numerical order shown. Note, however, that you won't normally need to scan these setup barcodes – your Barcode Zapper will normally have been supplied already set up for you.

1 
MASTER DEFAULT

2 
PROGRAM

3 
HOST INTERFACE SELECTION

4 
0

5 
5

6 
CODE 39 MIN LENGTH

7 
0

8 
1

9 
CODE 25 MIN LENGTH

10 
0

11 
2

12 
END

Standard RS-232 Setup

You **must** scan the barcodes below in the numerical order shown. Note, however, that you won't normally need to scan these setup barcodes – your Barcode Zapper will normally have been supplied already set up for you.

1 
MASTER DEFAULT

2 
SERIAL COMMS DEFAULTS

3 
PROGRAM

4 
HOST INTERFACE SELECTION

5 
0

6 
6

7 
CODE 39 MIN LENGTH

8 
0

9 
1

10 
CODE 25 MIN LENGTH

11 
0

12 
2

13 
END

Standard RS-232 Serial Wedge Setup

You **must** scan the barcodes below in the numerical order shown. Note, however, that you won't normally need to scan these setup barcodes – your Barcode Zapper will normally have been supplied already set up for you.

1

MASTER DEFAULT

2

SERIAL COMMS DEFAULTS

3

PROGRAM

4

HOST INTERFACE SELECTION

5

0

6

7

7

CODE 39 MIN LENGTH

8

0

9

1

10

CODE 25 MIN LENGTH

11

0

12

2

13

END

Standard ZapStore Setup

You **must** scan the all of the barcodes below in the numerical order shown, then select one or more symbologies from the next page.

1 
MASTER DEFAULT

2 
SERIAL COMMS DEFAULTS

3 
PROGRAM

4 
HOST INTERFACE SELECTION

5 
0

6 
6

7 
HANDSHAKING PROTOCOL

8 
1 (RTS/CTS)

9 
TIMEOUT CONTROL

10 
3 (1 SECOND)

11 
CCD/LASER OP. MODE

12 
0 (LOW POWER MODE)

13 
ADJUSTABLE BUZZER TONE

14 
0 (DISABLE)

15 
CODE 39 MIN LENGTH

16 
0

17 
1

18 
CODE 25 MIN LENGTH

19 
0

20 
2

21 
DEBOUNCE TIME CONTROL

22 
4

23 
END

ZapStore Symbology Setup

After scanning the ZapStore setup barcodes on the previous page, you must then select one or more symbologies (or barcode types) from the list below. Scan the **PROGRAM** barcode on the left, then the **SYMBOLOGY** barcode, then scan a two-digit sequence from the right column for each symbology to be enabled (see the table on the left below), then finally scan the **END** barcode on the left.

1

PROGRAM

2

SYMBOLOGY

4

END

The table below lists the two-digit codes that must be scanned to enable barcode symbologies. For best results, you should enable only the symbologies that you will actually be using.

Symbology	Code
Code 128	01
UPC-A	02
UPC-E	03
EAN/CAN/JAN-13	04
EAN/CAN/JAN-8	05
Codabar	06
Code 39	07
Interleaved 2 of 5	08
Code 93	09

0

1

2

3

4

5

6

7

8

9

Notebook Type 10 Setup

You **must** scan the barcodes below in the numerical order shown. Note, however, that you won't normally need to scan these setup barcodes – your Barcode Zapper will normally have been supplied already set up for you.

1

MASTER DEFAULT

2

KEYBOARD WEDGE DEFAULTS

3

PROGRAM

4

HOST INTERFACE SELECTION

5

1

6

0

7

INTERCHARACTER DELAY

8

1

9

2

10

CODE 39 MIN LENGTH

11

0

12

1

13

CODE 25 MIN LENGTH

14

0

15

2

16

END

Notebook Type 13 Setup

You **must** scan the barcodes below in the numerical order shown. Note, however, that you won't normally need to scan these setup barcodes – your Barcode Zapper will normally have been supplied already set up for you.

1 
MASTER DEFAULT

2 
KEYBOARD WEDGE DEFAULTS

3 
PROGRAM

4 
HOST INTERFACE SELECTION

5 
1

6 
3

7 
INTERCHARACTER DELAY

8 
1

9 
2

10 
CODE 39 MIN LENGTH

11 
0

12 
1

13 
CODE 25 MIN LENGTH

14 
0

15 
2

16 
END

Notebook Type 14 Setup

You **must** scan the barcodes below in the numerical order shown. Note, however, that you won't normally need to scan these setup barcodes – your Barcode Zapper will normally have been supplied already set up for you.

1

MASTER DEFAULT

2

KEYBOARD WEDGE DEFAULTS

3

PROGRAM

4

HOST INTERFACE SELECTION

5

1

6

4

7

INTERCHARACTER DELAY

8

1

9

2

10

CODE 39 MIN LENGTH

11

0

12

1

13

CODE 25 MIN LENGTH

14

0

15

2

16

END

Miscellaneous Options

The final section of this manual contains the setup barcodes for a number of the more common options, such as setting the baud rate, the beeper and trigger modes, the termination character, and ISBN (SCIS) mode. Remember that you shouldn't need to scan these setup barcodes – your Barcode Zapper will normally have been supplied already set up for you.

RS-232 Baud Rate Setup

To set the baud rate, scan the **PROGRAM** barcode on the left below, then the **SET BAUD RATE** barcode, then one of the baud rate barcodes on the right, then the **END** barcode on the left.

1

PROGRAM

2

SET BAUD RATE

4

END

3

38400 baud

3

19200 baud

3

9600 baud

3

4800 baud

3

2400 baud

3

1200 baud

3

600 baud

Beeper Mode Setup

To set the beeper mode, scan the **PROGRAM** barcode on the left below, then the **BEEPER TONE** barcode, then one of the option barcodes on the right, then the **END** barcode on the left.

1

PROGRAM

2

BEEPER TONE

4

END

3

No Beep

3

Low Pitch

3

Medium Pitch

3

High Pitch

3

Very High Pitch

Trigger Mode Setup

To set the trigger mode, scan the **PROGRAM** barcode on the left below, then the **TRIGGER MODE** barcode, then one of the option barcodes on the right, then the **END** barcode on the left.

Note that the "**use trigger**" mode should always be used for portable applications - the "**continuously on**" mode will run the batteries down too quickly.

1

PROGRAM

2

TRIGGER MODE

4

END

3

Use Trigger

3

Continuously On

ISBN (SCIS) Conversion

The Barcode Zapper can be set to convert EAN-13 barcodes that start with "978" into ISBN numbers, as required by the SCIS system, or to leave them as EAN-13 codes.

First, scan the **PROGRAM** barcode on the left below, then the **EAN/CAN/JAN SETTING** barcode, then one of the **ISBN** barcodes on the right, and finally the **END** barcode on the left.


1 **PROGRAM**


2 **EAN/CAN/JAN SETTING**


4 **END**


3 **Convert to ISBN/SCIS**


3 **Do not convert to ISBN/SCIS**

Output Terminators for PC, Notebook, USB and Apple

To set the terminator character when the Barcode Zapper is set to PC Keyboard Wedge, Notebook, USB or Apple Macintosh modes, scan the **PROGRAM** barcode on the left below, then **KEYBOARD TERMINATOR** barcode, then one of the terminator barcodes on the right, then the **END** barcode on the left.


1 **PROGRAM**


2 **KEYBOARD TERMINATOR**


4 **END**


3 **NONE**


3 **ENTER**


3 **TAB**


3 **SPACE**

Terminators for RS-232 and Serial Wedge Only

To set the terminator character when the Barcode Zapper is set to RS-232 or RS-232 Serial Wedge mode, scan the **PROGRAM** barcode on the left below, then **RS-232 TERMINATOR** barcode, then one of the terminator barcodes on the right, then the **END** barcode on the left.

1
PROGRAM

2
RS-232 TERMINATOR

4
END

3
NONE

3
CR

3
LF

3
CR/LF

3
TAB

3
SPACE

Output Delays for PC Keyboard Wedge & Notebooks

To set delays between each character output by the Barcode Zapper when operating in PC Keyboard Wedge or Notebook mode, scan the **PROGRAM** barcode on the left below, then the **INTERCHARACTER DELAY** barcode, then two numeric digits (01 to 99 in milliseconds) from the barcodes on the right, then finally the **END** barcode on the left.

1

PROGRAM

2

INTERCHARACTER DELAY

4

END

3 **0**

3 **1**

3 **2**

3 **3**

3 **4**

3 **5**

3 **6**

3 **7**

3 **8**

3 **9**

Electromagnetic Interference

The ASP Barcode Zapper has been tested for compliance with the following standards:

USA	FCC Part 15, Subpart B, Class A.
Europe	European Standard EN 55022:1994/A1:1995 Class A.
Australia	Australian Standard AS3548:1993 (being an equivalent Standard to the European Standard above).

N515

Warranty

To the extent permitted by law ASP's warranty in respect of the Barcode Zapper and its use is limited to correction of defects in the Barcode Zapper due to faulty components or workmanship for a period of one year from the date of purchase.

It is your responsibility to carefully pack any unit being returned for service, warranty or otherwise, and pay shipping charges to your dealer location or ASP. Units sent freight collect will not be accepted. Freight back to you will be paid by ASP in the case of warranty repairs.

ASP welcomes suggestions for improvements to our products and documentation.